Patent Claims

1. Method for producing an erosion-resistant protective coating, **characterized by**:
   a) providing at least one lacquer material, the lacquer material being a phosphate or silicate preferably mixed with particles,
   b) applying at least one layer of the lacquer material or each lacquer material to a component that is to be protected from erosion,
   c) converting the applied lacquer layer or each applied lacquer layer into a glass layer.

2. Method according to Claim 1, **characterized in that** in conjunction with method step a), multiple lacquer materials based either on phosphate or silicate are provided, said lacquer materials differing in the particles added to the phosphate or silicate.

3. Method according to Claim 1 or 2, **characterized in that** in conjunction with method step b), multiple lacquer layers based either on phosphate or silicate are applied to the component, said lacquer layers differing in the added particles.

4. Method according to Claim 3, **characterized in that** a lacquer material based on phosphate or silicate with added aluminum powder and/or with added hollow beads is used for the lacquer layer to be applied next to the component.

5. Method according to Claim 3 or 4, **characterized in that** a lacquer material based on phosphate or silicate with added ceramic particles and/or nitride particles is used for an exterior lacquer layer at a distance from the component.

6. Method according to any one or more of Claims 3 through 5, **characterized in that** to provide an exterior layer forming a top layer, an antifouling layer is applied.

7. Method according to any one or more of the preceding claims, **characterized in that** a layer sequence of at least two different layers repeated several times is applied.

8. Method according to any one or more of the preceding claims, **characterized in that** the component coated with the lacquer layers is heated in conjunction with method step c) and then is cooled, a phosphate glass bond or a silicate glass bond being formed between the lacquer layers that were originally separate from one another.

9. Method according to any one or more of the preceding claims, **characterized in that** in conjunction with method step b), the lacquer layer or each lacquer layer is applied by lacquering, in particular by dipping, spraying or painting.

10. Method according to any one or more of the preceding claims, **characterized in that** the component being coated is a component of a gas turbine having flow around it.

11. Protective layer, namely an erosion-resistant protective layer applied to a surface of a component that is to be protected and is exposed to mechanical and/or fluidic stresses, **characterized in that** the protective layer consists essentially of a phosphate glass or a silicate glass with particles incorporated into the phosphate glass or silicate glass.

12. Protective layer according to Claim 11, **characterized in that** different particles are incorporated into the phosphate glass or the silicate glass, depending on the distance from the component to be coated.

13. Protective layer according to Claim 11 or 12, **characterized in that** aluminum powder and/or hollow beads are incorporated near the component.

14. Protective layer according to any one or more of Claims 11 through 13, **characterized in that** ceramic particles and/or nitride particles are incorporated at a distance from the component.

15. Protective layer according to any one or more of Claims 11 through 14, **characterized in that** an exterior layer forming a top layer is designed as an antifouling layer.

16. Protective layer according to any one or more of Claims 11 through 15, **characterized in that** a layer sequence of at least two different layers is designed to be repeated several times.

17. Protective layer according to any one or more of Claims 11 through 16, **characterized in that** it is applied to a component of a gas turbine with gas flowing around it, in particular a jet propulsion engine.

18. Component of a gas turbine, in particular a jet propulsion engine **characterized by** a protective layer according to any one or more of Claims 11 through 17.

19. Component according to Claim 18, **characterized in that** the component is designed as a component of a jet propulsion engine with gas flowing around it, in particular a compressor rotor having integral blading.

20. Use of a protective layer according to any one or more of Claims 11 through 17 on a component of a gas stream turbine with gas flowing around it, in particular a component of a jet propulsion engine with gas flowing around it.

21. Use of a protective layer according to any one or more of Claims 11 through 17 on a rotor having

integral blading, namely a so-called blisk (bladed disk) of a compressor of a gas turbine, in particular of a jet propulsion engine.